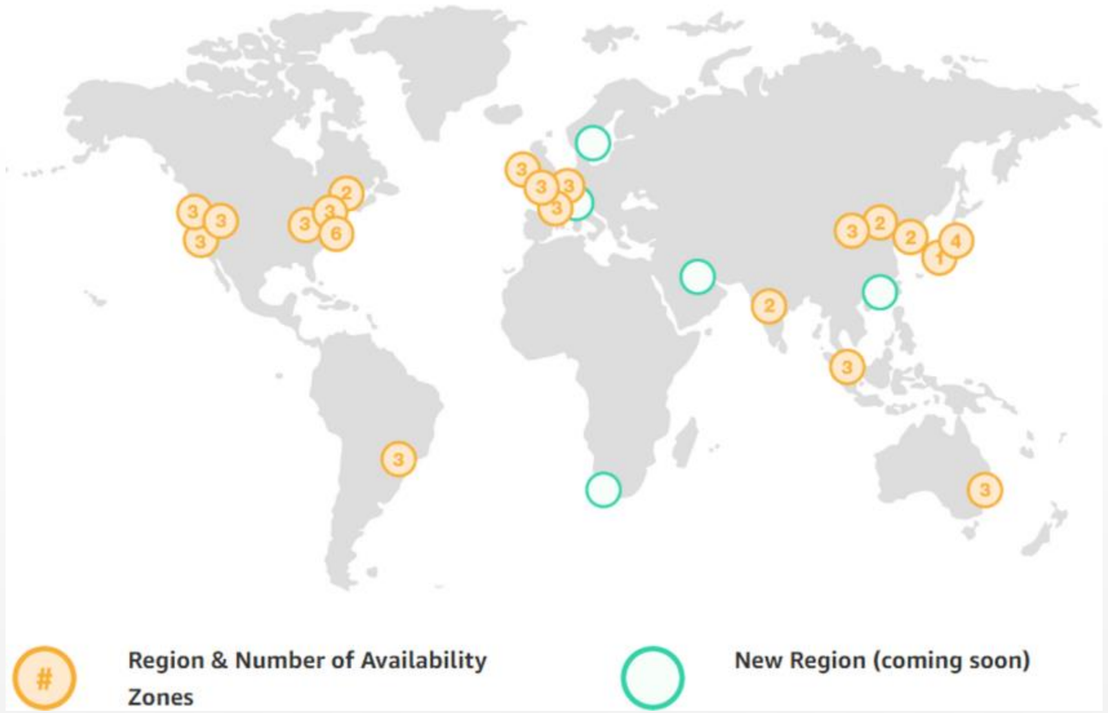
Duration: 60 min | Amazon Web Services | Solutions Architect | Global infrastructure

AWS - Global Infrastructure

Amazon Web Services



What is AWS ?

- AWS is a Cloud service from Amazon, Which provides services in the form of Building Blocks
- High Availability
- High Scalability
- High Reliability

Global InfraStructure

- AWS provides Highly Available Technology Platform With Multiple locations World-Wide
- These Locations are composed of
    - Regions
    - Availability Zones
    - Edge Locations

Global InfraStructure

- AWS provides Highly Available Technology Platform With Multiple locations World-Wide
- These Locations are composed of
  - Regions -- 31
  - Availability Zones -- 99
  - Edge Locations – 400+

Global InfraStructure

AWS Global Infrastructure Map

The AWS Cloud spans 99 Availability Zones within 31 geographic regions around the world, with announced plans for 15 more Availability Zones and 5 more AWS Regions in Canada, Israel, Malaysia, New Zealand, and Thailand.

Global InfraStructure

Regions

- Separate Geographic Region
- Has Multiple, Isolated Locations called Availability Zones.
- Achieves the Greatest possible Fault Tolerance and stability.
- AZs are connected using Low Latency Links

Global InfraStructure

Availability Zone - AZ

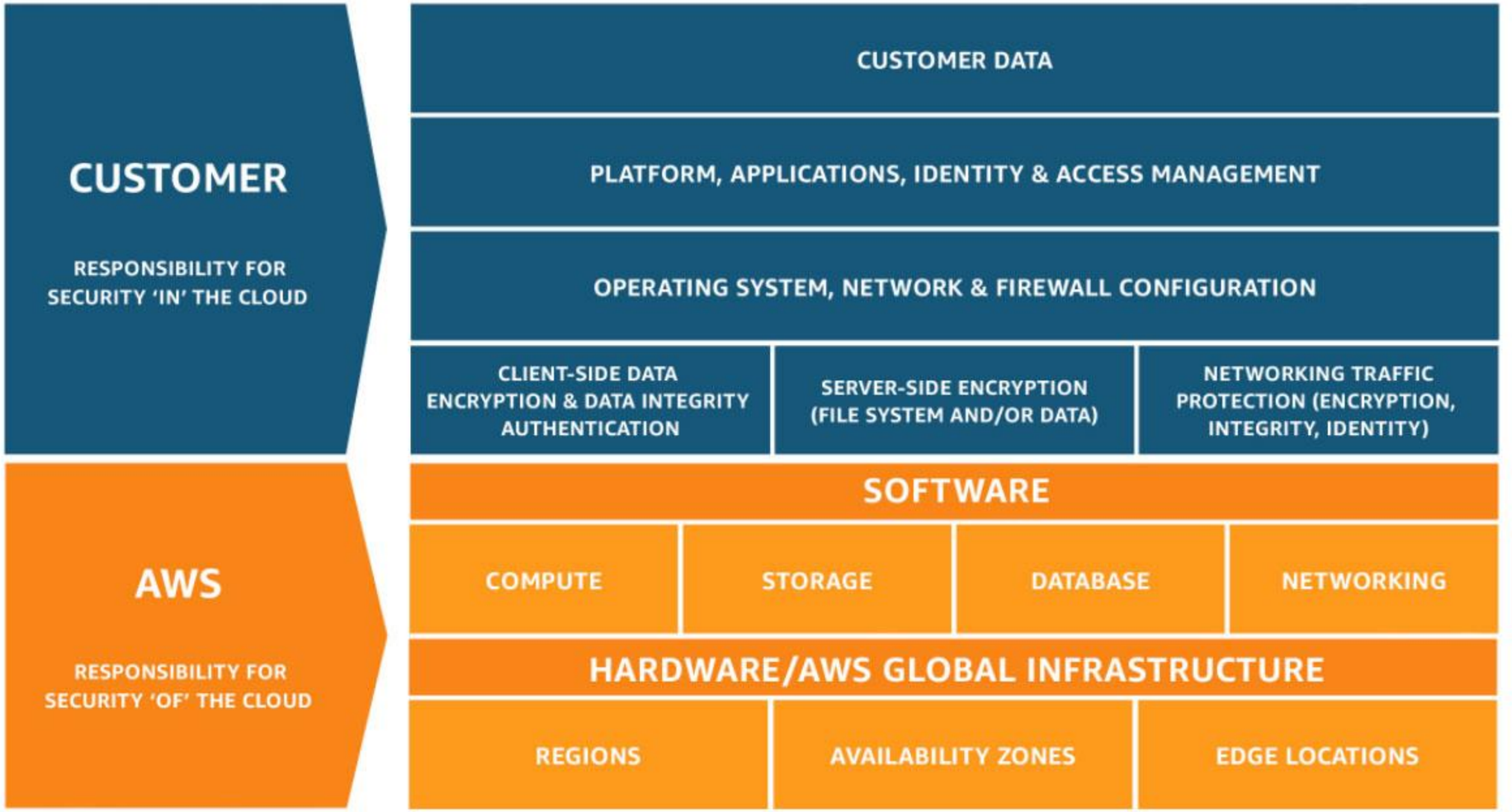
- Physical Data Centre of AWS
- The place where actual compute, storage, network, and database resources are hosted.
- A single availability zone is equal to a single data center.
- Availability Zones are physically separated within a typical metropolitan region and are located in lower-risk flood plains

Global InfraStructure

Edge Locations

- Edge Locations are CDN Endpoints.
- Edge Locations are located in most of the major cities around the world
- used by CloudFront (CDN) to distribute content to end user to reduce latency

AWS Shared Responsibility Model



6 Pillars of the AWS Well-Architected Framework

The AWS Well-Architected Framework helps cloud architects build the most secure, high-performing, resilient, and efficient infrastructure possible for their applications.

- Operational Excellence
- Security
- Reliability
- Peformance Efficiency
- Cost Optimization
- Sustainability

Operational Excellence

The Operational Excellence pillar includes the ability to support development and run workloads effectively, gain insight into their operation, and continuously improve supporting processes and procedures to delivery business value.

Design Principle:

- ✓ Perform operations as code
- ✓ Make frequent, small, reversible changes
- ✓ Refine operations procedures frequently
- ✓ Anticipate failure
- ✓ Learn from all operational Failures

Security

The Security pillar includes the ability to protect data, systems, and assets to take advantage of cloud technologies to improve your security.

Design Principle:

- ✓ Implement a strong identity foundation
- ✓ Enable traceability
- ✓ Apply security at all layers
- ✓ Automate security best practices
- ✓ Protect data in transit and at rest
- ✓ Keep people away from data
- ✓ Prepare for security events

Reliability

The Reliability pillar encompasses the ability of a workload to perform its intended function correctly and consistently when it’s expected to. This includes the ability to operate and test the workload through its total lifecycle.

Design Principle:

- ✓ Automatically recover from failure
- ✓ Test recovery procedures
- ✓ Scale horizontally to increase aggregate workload availability
- ✓ Stop guessing capacity
- ✓ Manage change in automation

Performance Efficiency

The Performance Efficiency pillar includes the ability to use computing resources efficiently to meet system requirements, and to maintain that efficiency as demand changes and technologies evolve.

Design Principle:

- ✓ Democratize advanced technologies
- ✓ Go global in minutes
- ✓ Use serverless architectures
- ✓ Experiment more often
- ✓ Consider mechanical sympathy

Cost Optimization

The Cost Optimization pillar includes the ability to run systems to deliver business value at the lowest price point.

Design Principle:

- ✓ Implement cloud financial management
- ✓ Adopt a consumption model
- ✓ Measure overall efficiency
- ✓ Stop spending money on undifferentiated heavy lifting
- ✓ Analyze and attribute expenditure

Global InfraStructure

AWS PlatForm

IOT		Game Development
Customer Engagement	Business Applications	Desktop & App Streaming
AR & VR	Application Integration	AWS Cost Management
Analytics	Security, Identity & Compliance	Mobile
Management & Governance	Media Services	Machine Learning
Robotics	BlockChain	Satellite
Migration & Transfer	Network & Content Delivery	Developer Tools
Compute	Storage	Databases
AWS Global Infrastructure		

Global InfraStructure

Solutions Architect

<table>
<tr><td colspan="2">Databases</td></tr>
<tr><td>Security, Identity & Compliance</td><td>Network & Content Delivery</td></tr>
<tr><td>Compute</td><td>Storage</td></tr>
<tr><td colspan="2">AWS Global Infrastructure</td></tr>
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